

WHAT IS CLAIMED IS:

1. An image processing method for recording a plurality of sensed images on a recording medium, and playing back and displaying the images, comprising: the
5 image sensing step of sensing an image; the recording/playback step of recording and playing back the image sensed in the image sensing step; and the

sensed at least before a current image, wherein the

10 sensed at least before a current image, wherein the display step comprises a plurality of display layout modes for displaying the current image sensing signal, and a signal obtained by playing back the image sensed at least before the current image with partial boundary regions thereof overlapping each other.

15 2. The method according to claim 1, wherein the image is a still image and/or a moving image.

3. The method according to claim 1, wherein the plurality of display layout modes of the display step include a first display layout mode in which the images are laid out in two directions, and a second display layout mode in which the images are laid out in one direction.

20 4. The method according to claim 3, wherein in the second display layout mode, the images are laid out horizontally and/or vertically.

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5. An image processing apparatus for recording a plurality of sensed images on a recording medium, and playing back and displaying the images, comprising:
image sensing means for sensing an image;
5 recording/playback means for recording and playing back the image sensed by said image sensing means; and display means for playing back and displaying an image

display means comprises a plurality of display layout
10 modes for displaying the current image sensing signal, and a signal obtained by playing back the image sensed at least before the current image with partial boundary regions thereof overlapping each other.

6. The apparatus according to claim 5, wherein the
15 image is a still image and/or a moving image.

7. The apparatus according to claim 5, wherein the plurality of display layout modes of said display means include a first display layout mode in which the images are laid out in two directions, and a second display
20 layout mode in which the images are laid out in one direction.

8. The apparatus according to claim 7, wherein in the second display layout mode, the images are laid out horizontally and/or vertically.

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9. The method according to claim 1, further comprising a function of reversing the layout direction in the one direction.

10. The apparatus according to claim 5, further

5 comprising a function of reversing the layout direction
in the one direction.

11. The method according to claim 1, wherein the

out and displaying the current image sensing signal, and
10 a signal obtained by playing back the image sensed at
least before the current image in two directions with
partial boundary regions thereof overlapping each other,
and includes the selection step of selecting an
arbitrary one of display regions laid out in the display
15 layout mode.

12. The apparatus according to claim 5, wherein said display means comprises a display layout mode for laying out and displaying the current image sensing signal, and a signal obtained by playing back the image sensed at least before the current image in two directions with partial boundary regions thereof overlapping each other, and includes selection means for selecting an arbitrary one of display regions laid out in the display layout mode.

25 13. A storage medium which stores a control program
for controlling an image processing apparatus for

recording a plurality of sensed images on a recording medium, and playing back and displaying the images, said control program having control modules of the steps of: sensing an image; recording and playing back the sensed

5 image; playing back and displaying an image sensed at least before a current image; and controlling to execute a plurality of display layout modes for displaying the

playing back the image sensed at least before the

10 current image with partial boundary regions thereof overlapping each other.

14. The medium according to claim 13, wherein the image is a still image and/or a moving image.

15. The medium according to claim 13, wherein said program further has a control module of the step of controlling to execute a function of reversing the layout direction in the one direction.

16. The medium according to claim 13, wherein said control program further has a control module of the step 20 of controlling to select an arbitrary one of display regions laid out in a display layout mode for laying out and displaying the current image sensing signal, and a signal obtained by playing back the image sensed at least before the current image in two directions with 25 partial boundary regions thereof overlapping each other.

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17. An image processing apparatus having a function of
storing a plurality of sensed still images and/or moving
images in storage means, comprising:

image sensing means comprising an image sensing
5 lens which can change an optical system condition;
storage means for storing a plurality of images
sensed by said image sensing means in association with

each other;

optical system condition change instruction means
10 for outputting an instruction for changing the optical
system condition of said image sensing lens; and
control means for controlling to generate an alert
and/or inhibit the optical system condition of said
image sensing lens from changing upon reception of the
15 instruction for changing the optical system condition of
said image sensing lens from said optical system
condition change instruction means after a first one of
the plurality of images to be stored in said storage
means in association with each other is sensed and
20 stored.

18. The apparatus according to claim 17, wherein the
optical system condition is a focal length of said image
sensing lens.

19. The apparatus according to claim 17, wherein
25 associating the plurality of images is obtaining a
panoramic image by synthesizing the plurality of images.

20. The apparatus according to claim 17, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the 5 plurality of images sensed by performing the pixel shift.

21. An image processing apparatus having a function of storing a plurality of sensed still images and/or moving images in storage means, comprising:

image sensing means comprising an image sensing 10 lens which can change an optical system condition; storage means for storing a plurality of images sensed by said image sensing means in association with each other; optical system condition change instruction means 15 for outputting an instruction for changing the optical system condition of said image sensing lens; and control means for controlling to start image sensing of a plurality of new images to be stored in association with each other upon reception of the 20 instruction for changing the optical system condition of said image sensing lens from said optical system condition change instruction means after a first one of the plurality of images to be stored in said storage means in association with each other is sensed and 25 stored.

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22. - The apparatus according to claim 21, wherein the optical system condition is a focal length of said image sensing lens.

23. The apparatus according to claim 21, wherein
5 associating the plurality of images is obtaining a
panoramic image by synthesizing the plurality of images.

24 The apparatus according to claim 21, wherein the

pixel shift, and associating the plurality of images is
10 obtaining a high-resolution image by synthesizing the
plurality of images sensed by performing the pixel shift.

25. The apparatus according to claim 17, wherein said control means controls to start image sensing of a plurality of new images to be stored in association with 15 each other after the alert is generated.

26. An image processing apparatus having a function of storing a plurality of sensed still images and/or moving images in storage means, comprising:

image sensing means comprising an image sensing
lens which can change an optical system condition;
storage means for storing a plurality of images
sensed by said image sensing means in association with
each other;

optical system condition change instruction means
25 for outputting an instruction for changing the optical
system condition of said image sensing lens; and

control means for controlling to set the optical system condition of said image sensing lens at an initial value before sensing of a first one of the plurality of images to be stored in said storage means

5 in association with each other is started.

27. The apparatus according to claim 26, wherein the optical system condition is a focal length of said image

28. The apparatus according to claim 27, wherein the
10 initial value is a focal length on a wide-angle end of said image sensing lens.

29. The apparatus according to claim 26, wherein associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

15 30. The apparatus according to claim 26, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

20 31. A control method for an image processing apparatus which comprises image sensing means comprising an image sensing lens which can change an optical system condition, storage means for storing a plurality of images sensed by said image sensing means in association
25 with each other, and optical system condition change instruction means for outputting an instruction for

changing the optical system condition of said image sensing lens, comprising the step of:

generating an alert and/or inhibiting the optical system condition of said image sensing lens from

5 changing upon reception of the instruction for changing
the optical system condition of said image sensing lens
from said optical system condition change instruction

stored in said storage means in association with each

10 other is sensed and stored.

32. The method according to claim 31, wherein the optical system condition is a focal length of said image sensing lens.

33. The method according to claim 31, wherein

15 associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

34. The method according to claim 31, wherein the

plurality of images are images sensed by performing pixel shift, and associating the plurality of images is

20 obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shif

35. A control method for an image processing apparatus which comprises image sensing means comprising an image sensing lens which can change an optical system

25 condition, storage means for storing a plurality of images sensed by said image sensing means in association

with each other, and optical system condition change instruction means for outputting an instruction for changing the optical system condition of said image sensing lens, comprising the step of:

5 starting image sensing of a plurality of new
images to be stored in association with each other upon
reception of the instruction for changing the optical

optical system condition change instruction means after

10 a first one of the plurality of images to be stored in
said storage means in association with each other is
sensed and stored.

36. The method according to claim 35, wherein the optical system condition is a focal length of said image sensing lens.

37. The method according to claim 35, wherein associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

38. The method according to claim 35, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

39. The method according to claim 31, wherein image
25 sensing of a plurality of new images to be stored in

association with each other is started after the alert is generated.

40. A control method for an image processing apparatus which comprises image sensing means comprising an image sensing lens which can change an optical system condition, storage means for storing a plurality of images sensed by said image sensing means in association

instruction means for outputting an instruction for
10 changing the optical system condition of said image
sensing lens, comprising the step of:

setting the optical system condition of said image sensing lens at an initial value before sensing of a first one of the plurality of images to be stored in said storage means in association with each other is started.

41. The method according to claim 40, wherein the optical system condition is a focal length of said image sensing lens.

20 42. The method according to claim 41, wherein the initial value is a focal length on a wide-angle end of said image sensing lens.

43. The method according to claim 40, wherein
associating the plurality of images is obtaining a.
25 panoramic image by synthesizing the plurality of images.

44. The method according to claim 40, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the 5 plurality of images sensed by performing the pixel shift.

45. A storage medium that stores a control program for controlling an image processing apparatus which comprises image

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10 sensing lens which can change an optical system condition, storage means for storing a plurality of images sensed by said image sensing means in association with each other, and optical system condition change instruction means for outputting an instruction for changing the optical system condition of said image 15 sensing lens, said control program comprising a code of the step of:

generating an alert and/or inhibiting the optical system condition of said image sensing lens from changing upon reception of the instruction for changing 20 the optical system condition of said image sensing lens from said optical system condition change instruction means after a first one of the plurality of images to be stored in said storage means in association with each other is sensed and stored.

46. The medium according to claim 45, wherein the optical system condition is a focal length of said image sensing lens.

47. The medium according to claim 45, wherein 5 associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

48. The medium according to claim 45, wherein the plurality of images is

pixel shift, and associating the plurality of images is 10 obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

49. A storage medium that stores a control program for controlling an image processing apparatus which comprises image sensing means comprising an image 15 sensing lens which can change an optical system condition, storage means for storing a plurality of images sensed by said image sensing means in association with each other, and optical system condition change instruction means for outputting an instruction for 20 changing the optical system condition of said image sensing lens, said control program comprising a code of the step of:

starting image sensing of a plurality of new images to be stored in association with each other upon 25 reception of the instruction for changing the optical system condition of said image sensing lens from said

optical system condition change instruction means after a first one of the plurality of images to be stored in said storage means in association with each other is sensed and stored.

5 50. The medium according to claim 49, wherein the optical system condition is a focal length of said image sensing lens.

51. The medium according to claim 49, wherein

10 associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

52. The medium according to claim 49, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the

15 plurality of images sensed by performing the pixel shift.

53. The medium according to claim 45, wherein said control program further comprises a code of the step of starting image sensing of a plurality of new images to be stored in association with each other after the alert

20 is generated.

54. A storage medium that stores a control program for controlling an image processing apparatus which comprises image sensing means comprising an image sensing lens which can change an optical system

25 condition, storage means for storing a plurality of images sensed by said image sensing means in association

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with each other, and optical system condition change

instruction means for outputting an instruction for

changing the optical system condition of said image

sensing lens, said control program comprising a code of

5 the step of:

setting the optical system condition of said image sensing lens at an initial value before sensing of a first one of the plurality of

said storage means in association with each other is

10 started.

55. The medium according to claim 54, wherein the optical system condition is a focal length of said image sensing lens.

56. The medium according to claim 55, characterized in that

15 initial value is a focal length on a wide-angle end of
said image sensing lens

57. The medium according to claim 54, wherein associating the plurality of images is obtaining a panoramic image by synthesizing the plurality of images.

20 58. The medium according to claim 54, wherein the plurality of images are images sensed by performing pixel shift, and associating the plurality of images is obtaining a high-resolution image by synthesizing the plurality of images sensed by performing the pixel shift.

25 59. The apparatus according to any one of claims 17,
21 and 26, wherein the change in optical system

condition includes free attachment/detachment of said lens unit.

60. An image processing apparatus having a function of
storing a plurality of sensed still images and/or moving
5 images in storage means, comprising:

a detachable lens unit having nonvolatile storage means;

formed by said lens unit;

10 instruction means for instructing
attachment/detachment of said lens unit; and
control means for controlling to permit detachment
of said lens unit after information pertaining to an
operation state of said lens unit and/or user
15 information are/is stored in said nonvolatile storage
means, when said instruction means outputs an
instruction for detaching said lens unit, and for
reading out information pertaining to a use state of
said lens unit and/or the user information stored in
20 said nonvolatile storage means and re-setting an
operation state of said image processing apparatus in
accordance with the readout information, when said lens
unit is attached again.

61. The apparatus according to claim 60, wherein the
25 operation state is an image sensing mode of said image
processing apparatus.

62. The apparatus according to claim 60, wherein the operation state is a focal length setting value of a lens unit, a focal length of which can be changed.

63. A control method for an image processing apparatus
5 which comprises a detachable lens unit having nonvolatile storage means, image sensing means for sensing an object image formed by said lens unit, and instruction means

of said lens unit, comprising the step of:

10 permitting detachment of said lens unit after information pertaining to an operation state of said lens unit and/or user information are/is stored in said nonvolatile storage means, when said instruction means outputs an instruction for detaching said lens unit, and
15 reading out information pertaining to a use state of said lens unit and/or the user information stored in said nonvolatile storage means and re-setting an operation state of said image processing apparatus in accordance with the readout information, when said lens
20 unit is attached again.

64. The method according to claim 63, wherein the operation state is an image sensing mode of said image processing apparatus.

65. The method according to claim 63, wherein the
25 operation state is a focal length setting value of a lens unit, a focal length of which can be changed.

66. A storage medium that stores a control program for controlling an image processing apparatus which comprises a detachable lens unit having nonvolatile storage means, image sensing means for sensing an object 5 image formed by said lens unit, and instruction means for instructing attachment/detachment of said lens unit, said control program comprising a code of the step of:

information pertaining to an operation state of said 10 lens unit and/or user information are/is stored in said nonvolatile storage means, when said instruction means outputs an instruction for detaching said lens unit, and reading out information pertaining to a use state of said lens unit and/or the user information stored in 15 said nonvolatile storage means and re-setting an operation state of said image processing apparatus in accordance with the readout information, when said lens unit is attached again.

67. The medium according to claim 66, wherein the 20 operation state is an image sensing mode of said image processing apparatus.

68. The medium according to claim 66, wherein the operation state is a focal length setting value of a lens unit, a focal length of which can be changed.

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